

Disconnect between community testing and hospitalization for SARS-CoV-2 (COVID-19) infection

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Many have called for more nasopharyngeal swab severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, COVID-19) real-time reverse transcription polymerase chain reaction (NP-PCR) testing in response to the pandemic crisis. Without uniform or randomly selected sampling, ambulatory testing as it exists today is determined by assay availability and proclivity of individuals to obtain testing. We sought to quickly report on the relationship between ambulatory community testing and patients hospitalized for COVID-19.

From all patients admitted to Baylor University Medical Center at Dallas from March 19, 2020, to April 12, 2020, a total of 105 patients were diagnosed with COVID-19. Of those 105 patients, 84 (80.0%) had the diagnosis established after being admitted as a suspected COVID-19 case. Conversely, 21 (20.0%) patients had a prior positive test before being hospitalized. Of the 21, 14 tested positive in the community (primary care, drive-through/urgent care) by NP-PCR, and 7 tested positive in our emergency room or another hospital. Of those 21 previously diagnosed cases, 19 of the 21 patients have been discharged at the time of this writing and 2 still remain in the hospital in the intensive care unit (one tested positive in a prior emergency room visit). Data from the Dallas County Health and Human Services Department indicated that since the onset of the outbreak until April 11, 2020, the positive rate was 236/2189 (10.8%) of COVID-19 NP-PCR tests from all outpatient and hospital laboratories, with a peak on March 27, 2020, of 38 new hospitalizations and a total of 118 new cases that day.¹

Thus, there may be two COVID-19 populations evolving, those with ambulatory and presumably mild symptoms identified by the hundreds of thousands of outpatient tests administered in the United States and those hospitalized with suspected and then later hospital-confirmed COVID-19 with serious risks of multiorgan failure and death.² It appears that community testing is not identifying cases that progress at

home and later require hospitalization. This may be due to the lack of availability of ambulatory testing, which in our health system requires a physician's order from an ambulatory clinic that could be closed due to the pandemic. Thus, community test positive rates, despite the prominent daily reporting by health departments and the popular media, are unlikely to be a valid proxy for current or future COVID-19 hospitalizations.³

In summary, we found that only 14/105 (13.3%) of hospitalized patients at our center had the diagnosis of COVID-19 established from heavily publicized and promoted community NP-PCR testing. Most hospitalized patients with COVID-19 arrived ill to our hospital and the diagnosis was established by our hospital laboratory during their inpatient stay. These data emphasize the importance of local, state, and national reporting of daily COVID-19 hospitalizations along with community NP-PCR positive and fatal COVID-19 cases for all stakeholders to understand and respond to this pandemic crisis.²

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